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NOTES ON IRISH CRUSTACEA.—FIRST SERIES—THE
BRACHYURA.

BY

WILLIAM ANDREWS, Esq., M.R.I.A.

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SINCE the death of my lamented friend and esteemed colleague in science, Dr. John Robert Kinahan, F.L.S., Honorary Secretary to the Natural History Society of Dublin, no attempts have been made to investigate, scientifically, the Crustacea of Ireland. Few possessed his zeal and energy, whether as a practical investigator, or as a sound inquirer into the views of theoretic science; and his loss is to be deplored as that of one who promised, as a faithful expositor, to be one of our brightest labourers in the field of natural science. Irish authorities, previous to the period of his investigations were numerous, amongst whom may be enumerated Doctors Robert Ball and Drummond, Forbes, William Thompson, Allman, Patterson, Hyndman, Melville, and that enthusiastic collector, William M'Calla. These have all more or less contributed to the knowledge of this branch of Natural History.

The very valuable observations of Captain Du Kane, and of J. V. Thompson, of Cork, laid the foundations of our insight into the early stages of the metamorphoses of the Crustacea. The persevering zeal of the late William Thompson of Belfast, and the candour with which all his communications were published at a time when, alas, rivalry and jealousy too generally existed, cannot but be most pleasingly held in recollection. His papers, contributed to the Annals of Natural History in the volumes for the years 1842 and 1843, fully noticed the Irish Crustacea known at those dates, and these have been collected in the posthumous fourth volume of his work on the Natural History of Ireland, published in 1856.

My object here is to give a series of remarks on the Crustacea

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of Ireland, and, as far as practicable, on their habits, and to add comments on the species which have been obtained since the notices that have already appeared through the investigations of those whose names I have mentioned. The collections of J. V. Thompson, of Cork, which were purchased by the Royal College of Surgeons, and subsequently presented to the Royal Dublin Society for re-arrangement, were not at the time complete; nor have the collections of the late William M'Calla, obtained for the Society by Dr. Scouler, escaped destruction. The collections of Doctor Kinahan, myself, and others, are not now forthcoming in the Museum of the Natural History Society of Dublin, though in the Reports of that Society, will be found a list of its nearly perfect collection of Irish Decapods, numbering fifty-eight species (one hundred and nine specimens). It is therefore desirable that so interesting a branch of our Marine Fauna should again receive attention. It is not necessary, neither is it my intention, to enter into details of structure, but merely to notice some characteristic points which may have led to, or confused the distinctions between species.

In the present paper I shall confine myself to the First Sub-Order of the Decapods, which comprises the Sub-Orders Brachyura, Anomoura, and Macroura.

In the first sub-order, Brachyura, the abdomen is but slightly developed—it is generally of no great assistance in swimming, and it is mostly wider in the females than in the males. My remarks, as far as they go, will be on the several genera and species known on the Irish coasts.

Family *Macropodidæ*.—Dr. Milne Edwards gives, as a characteristic of the species of this family, the extreme length of their slender legs.

The first of the genera is *Stenorhynchus*, of which only one species is in the lists of Irish crustacea. *S. phalangium*.—Though another is described as British (*S. tenuirostris*), yet its separation from the former is made upon such slight variations, that I most fully concur in the views of the late William Thompson, who carefully compared those obtained by him in Ireland, with the specimens described by Leach and Bell, in the British Museum. These two presumed species present indeed some differences in their spinous processes, and, as Thompson further remarks, “in

one of the two Irish examples of what I have called *S. tenuirostris*, in the British Museum, the wrist has the form attributed to that species, and in the other, that attributed to *S. phalangium*." I quote this as, in my remarks on the species of some other genera, I have strongly objected to specific distinctions made upon equally slender foundations. *S. phalangium* is a more robust and larger form than that described as *S. tenuirostris*, and is more frequently found in the weedy grounds of harbours and estuaries, while the latter is more generally met in clearer ground and deeper water. The former is very abundant in Dingle and Valentia harbours, the latter off the islands, and in the deeper water of the bay. Found in clear ground, *S. tenuirostris* is often of a beautiful pink or rose colour. Couch mentions having obtained it in twenty fathoms on the Cornish coast, but that he had never met with *S. phalangium*.

But one species is known of the genus *Achæus*, which was first found by J. Cranch, in Falmouth Bay, and named *A. cranchii* by Dr. Leach, after the distinguished collector, who perished in the Congo expedition. I cannot at present admit its claims as Irish, no authenticated specimen existing in any Museum in this country, at least that can be decided as such. In the list of Crustacea, published in the Journal of the Royal Dublin Society, July, 1856, *Achæus cranchii* is indeed mentioned, but no specimen is in the Museum. Dr. Kinahan states in the Proceedings of the Natural History Society, April, 1857, "that a single specimen was obtained in Arran, 1850; the only previous record of it as Irish, was a specimen formerly in the collection of J. V. Thompson, but some years past lost." It is difficult to be certain of a species, when there are no means of examining the specimen. In deep water, among broken shells and weeds, in the Blasket sound, I obtained several specimens of a crustacean which seemed to come very near to *Achæus*, particularly in the outline of the carapace, and the falcate or sickle-like form of the tarsi. The tubercles on the carapace were similar to *Achæus*, but there are other peculiarities that show affinities both to *Pisa* and to *Hyas*, especially to the latter, such as the contraction immediately behind the post-orbital process. The anterior portion of the carapace is much broader, however, in *Hyas* than in the specimens that I obtained, and the first pair of legs are in *Hyas* consider-

ably longer, so that I cannot be positive of its identity with *Achæus*.

Of the three species of genus *Inachus*, *I. dorhynchus*, is the most rare of those alluded to by Thompson in his list of Irish Crustacea, and he does not appear to have collected it. In the papers read before the Natural History Society of Dublin, by Professor Kinahan, two species are mentioned as common on the Dublin and Galway coasts, and in Belfast Bay. *Inachus leptochirus* is not given in any of Kinahan's lists, neither have I as yet met with it on the south-west coast, though the two he mentions are frequent. I have taken a beautiful specimen of *Inachus dorhynchus* in deep water; it is of a light yellow colour, the carapace and forelegs spotted with a dark coloured sponge. William Thompson mentions *I. leptochirus* as being dredged in Clifden Bay, Connemara. The two species, *I. dorsettensis* and *I. dorhynchus*, inhabit deep water, and both, according to the soundings, are found marked and quoted with either fungoid colorations or small fuci and zoophytes. On an examination of numerous specimens, scarcely any appreciable differences were to be detected. In *I. dorhynchus*, the margins of the shell being destitute of tubercles and the hands smooth, would seem the only distinctive marks to separate it from *I. dorsettensis*, characters in the crustacea by no means tenable.

Family *Maiadae*.—In the genus, *Pisa*, the species are described as presenting such variations of form and structure as to separate *P. tetraodon* from *P. gibbsii*; still there are such apparent connexions, that it is difficult to find characters which are not more or less common to both. The females seem even more closely allied in the form of the rostrum, the less spinous state of the lateral margins of the carapace, and the smaller proportions of the forelegs. The spine described on each branchial region in *P. gibbsii*, is not worth much as a specific distinction, as is shown in the genus *Gonoplax*. Both species are subject to growths of algæ and zoophytes, which cover the carapace and legs, more so in *P. gibbsii*, from the dense villous coat of the carapace favouring attachment. The specimen I now submit is more characteristic of *P. gibbsii* than of *P. tetraodon*, and may be considered as the *Arctopsis lanata* of Lamouroux—*Pisa gibbsii* of Leach. It was obtained in twenty-five fathoms off Innisnabroe Island, coast of

Kerry, and is now first presented as Irish. The only specimens of this genus in the Museums of Dublin were obtained at Roundstone, Connemara, where they were first discovered by the late William M'Calla, the species being *P. tetraodon*. William Thompson did not meet with this species; and in the observations of Professor Kinahan on the Marine Fauna of the coast of Clare (Dublin Natural History Society, 1st June, 1861), he states *Pisa tetraodon* had not been recorded south of Galway Bay until he had met with it in Clare; it was always in one habitat, on the branching stems of that pretty alga *Gelidium corneum*, in shallow rock pools. All the specimens were young and described as under an inch in length.

Both species of the genus Hyas, *H. araneus* and *H. coarctatus*, have been taken in deep water in Dingle Bay, frequently on the trawling grounds. *H. araneus* is of a large size, and has no contraction behind the post-orbital region, while *H. coarctatus* is generally of small size, and distinctly contracted behind the post-orbital. Both in clear soundings are found free from attachments of foreign substances. *H. coarctatus* is sometimes taken in shingly and weedy bottoms, where its carapace and legs become thickly coated with small fuci, zoophytes and sponges concealing its true outline; hence it has been mistaken for the young of *Pisa tetraodon*.

Maia Squinado (thorn back crab) has been obtained of large size, in the trawl net in Dingle Bay. A very large and beautiful specimen was taken, similar to those on the coast of France and the Mediterranean, where it is known as *Araignée de mer*. Though rejected in Ireland, it is by no means unpalatable. The species with the absence of spines on the surface, *Maia verrucosa*, Edwards, is not unlikely to be met on the south-west coast.

Family *Parthenopidae*.—Of the genus *Eurynome* there is but the one species, *E. aspera*, which has been dredged in deep water, in the outer Blasket sound, coast of Kerry. It is an exceedingly lively and pretty species, the form of the carapace not unlike to Hyas, but covered with tubercles. The peculiarity of the tubercles, and their rich rose tints, give to it the name of the strawberry crab. The frequency of species on our south-west coast that are peculiar to the shores of Cornwall and of Devon cannot escape observation.

Family *Canceridæ*. This is a family of more than ordinary interest, both on account of the extreme rarity of some of the species, and of the confusion that has arisen in the descriptions of its species.

Of the genus *Xantho*, three species have been described as British—*X. florida*, *X. rivulosa*, and *X. tuberculata*. The first (Montagu's crab), is a species not uncommon, being frequently taken under stones, between tide-marks, on the southern and western coasts. It is the largest species of the three, and is subject to variation of colour of its carapace and claws. In his list of the marine fauna of the coast of Clare, Dr. Kinahan mentions its being found under stones about half-way down the littoral zone.

Of *Xantho rivulosa*, he says but very little appears to have been known of either its distribution or habits. William Thompson only gives it on the authority of Colonel Portlock, who obtained one specimen in July, 1839, in the county of Antrim. Aware of its extreme rarity, others in the locality were sought for, but in vain. Kinahan observes that it may be considered as frequenting the southern, western, and north-eastern coasts, but in such districts, I would be doubtful of its identity, and of its separation from *X. florida* as a sub-littoral species. In Professor Kinahan's paper, read before the Natural History Society of Dublin, 12th December, 1856, on *Xantho rivulosa* (Risso's crab) and other decapodous crustacea, occurring at Valentia Island, county of Kerry, he mentions it "as one of the types of a genus which, essentially sub-tropical, reaches its northern limit on the British shores—itself an undoubted member of that fauna whose scattered members attest the probability of the union of the fauna of the west of Ireland and the Mediterranean districts." Notwithstanding he assiduously sought for it, but one specimen rewarded his labours. It is not surprising that it has been so seldom met, as it is a deep-water species and has been taken in the dredge in twenty-five fathoms, with broken shells and coral, off the Blasket Islands, coast of Kerry. The specimens that I obtained were very beautiful in the recent state, and numerous young were detected in the hollows of *Eschara foliacea*. The several specimens that I examined were perfectly distinct from *X. florida*, though having some characteristics common to both. The colour of the pincers and their ciliation cannot be considered as dis-

tinguishing points, and no dependence can be placed on excess of spinous processes or denticulations as specific distinctions, some of the specimens, though partaking much of the described characters of *X. rivulosa*, approach nearer to *X. tuberculata*, the absence of denticulations being the only characters to separate them from that species. As I have, however, observed, no reliance can be placed upon such variations, and I must consider that *X. rivulosa* and *X. tuberculata* possess similar characters, and that the latter figured in the appendix to Bell's British Crustacea, p. 359, is a doubtful species.

In order that these views might be corroborated, I forwarded a specimen to my friend Professor Allman, F.R.S., President of the Linnæan Society, who, in the earlier stages of his scientific career, had paid much attention to the Crustacea of Ireland, in order that he might compare it with the fine series of the genus in the British Museum. His examinations were most confirmatory, and he stated in reply, "Your view, as to the probability of *Xantho rivulosa* and *Xantho tuberculata* not being distinct species, is fully confirmed by comparison with the British Museum specimens; yours is certainly the form there labelled *Xantho rivulosa*, and that so described by Bell."

There is but one known British species of the genus *Pilumnus*. *P. hirtellus* (hairy crab) is much distributed on the western and southern coasts. In rocky pools, at the West Blasket Island, it is very numerous, where I also obtained beautiful specimens of the Cornish suckers—*Lepidogaster cornubiensis*, and *L. bimaculatus*.

Similarly, only one species of the genus *Pirimela* is known, the *P. denticulata* of Leach. This beautiful little species is richly variegated, the colours assuming varied tints, in different specimens. It is rather rare, is taken in deep water, and is an exceedingly active crustacean. When placed in a bowl of seawater with other specimens, it voraciously attacked minute specimens of *Mysis* and *Hippolyte*.

Family *Portunidæ*.—*Carcinus mænas*, the common shore crab, is so well known to every shore-paddling urchin, that no remark about it is necessary, beyond the notice that the finest specimens are obtained in deep water with a small trawl. It is found in the deeper soundings of the harbours of Dingle, Ventry, and Valentia, and also of Smerwick and Brandon. In those localities it is

obtained of good size, and it is in such that the velvet swimming crab, *Portunus puber* is also taken. Both, though rejected in Ireland, are considered in France delicate eating. The former is known as Le Crabe enragé, and the *Portunus puber*, (*Cancer velutinus* of Pennant) is known as Le Crabe à laine.

There is but the one species of the genus *Portunus*, *P. variegatus*, which I have not yet met with on the southern or western coasts. It is reported as a most common species along the sandy shores of Great Britain. William Thompson remarks how extremely local it is, and that he had not met with it on the Irish coast, though the localities dredged over were sandy, and off extensive beaches of the same nature. Dr. Kinahan, in his list of the Dublin Crustacea, mentions that it has been thrown ashore on Merrion Strand, after easterly gales.

Among the several species of the genus *Portunus* which are enumerated, more than ordinary care is necessary in the decision of the species. Indeed the views entertained by eminent carcinologists are so various as to render it necessary to have an extensive series of the species for examination. *Portunus corrugatus*, as described in Bell, is a species by no means of common occurrence. I have not seen in collections any specimens so decidedly distinctive as those I have obtained in deep water in Dingle Bay. The carapace is broader than the figure given in Bell, and the elevated ridges, and adpressed hairs fringing each line, are more decided. The colour is a rich reddish brown, the forelegs marked with brighter red, and with minute crenulated scales fringed with hairs. In the recent, or living state, it is the most beautiful of the series. The only specimens that William Thompson had seen were those in the Ordnance collection from Larne and Carrickfergus.

The *P. corrugatus* in the collection of J. V. Thompson, as obtained in the Harbour of Cove, is the wrinkled variety of *P. depurator*, and this mistake has been continued in the named specimens in some collections. Kinahan states that he obtained *P. corrugatus*, in Bangor and Ballyholme Bays; and Mr. Hyndman records it as found in twenty fathoms in Belfast Bay.

Of the other species of *Portunus*, viz., *P. arcuatus*, *P. depurator*, *P. marmoreus*, *P. holsatus*, and *P. pusillus*, all have been obtained on the south-west coast. *P. holsatus*, obtained in Dingle Bay,

appears the most rare. A single specimen only was met by Dr. Kinahan off Whitehead, as is given in his list of the dredgings of Belfast Bay. It is mentioned by William Thompson as observed in the same locality, and (as *P. lividus*), by Dr. Ball, in Dublin Bay. As I have observed, different views have been expressed with regard to the species *P. marmoreus*, *P. holsatus*, and *P. corrugatus*, and it will be necessary that a careful collection should be formed of these before one can decide upon their true definitions.

Before concluding this list of the Portuni, I have much gratification in recording as Irish, *Portunus longipes*, Risso. This decidedly distinct species is characterized by the length and slender proportions of its legs, and by a well marked ridge across the carapace, terminating at each margin with a strong spine. It is truly a Mediterranean species, and with other species strongly bears out the comparison made between the geographical distribution of Mediterranean and Lusitanian species with those on our south-western shores, and of Cornwall. This rare Crustacean is figured and described in the appendix to Bell's British Crustacea, p. 361.

But a single species is as yet known of the genus *Polybius*. *P. henslowii* was first found on the coast of Devonshire, and the specific name was given to it by Leach, in honour of its discoverer, Professor Henslow. It has been taken by my friend, Professor Allman, at Crookhaven, coast of Cork, swimming at the surface amid shoals of *Acalephæ*. It is not recorded in Bell's work as an Irish species.

Family *Gonoplacidae*.—The species of the genus *Gonoplax* have a habitat, similar to those of the genus *Polybius*, of rising to the surface. Though two species are described, *G. angulata* and *G. rhomboides*, they are merely varieties, only distinguishable by the latter having a kind of protuberance on the angles of the carapace, the former having two spines.

Gonoplax angulata is a rare species. A single specimen was shown to Dr. Kinahan, which had been thrown ashore near the Quay at Valentia, after a heavy gale, but he failed to find another. I have taken it in thirty-eight fathoms, in Dingle Bay. The fishermen recollected having seen a similar crab taken in the net when fishing for herrings in Ventry Harbour.

Family *Pinnotheridae*. All the species of the genus *Pinnotheres*

have been taken on the south-west coast, and frequently in deep water in the outer Blasket Sound. With *Porcellana longicornis*, in the young states, they are found in the cavities of the coral *Eschara foliacea*.

Family *Leucosiadæ*.—I have taken *Ebalia pennantii* of a beautiful rose colour.

It is remarkable of these very delicate and minute species, how varied and beautiful are their tints, though found in very deep water. I have often viewed with intense admiration those minute and fragile forms, taken even from depths of seventy fathoms; and where wild ocean seas roll over them with fearful grandeur. Strikingly are very vivid colours seen in Pinnotheres, Ebalia, and species of Hippolyte, as also in the CEsops Prawn, *Pandalus annulicornis*. It is only when captured that their beauties are so marked and observable, for in the spirit preparations their beautiful tints vanish.

This fact reminds me of a sentence by the author of "Bible Teachings in Nature," whose beauties of composition and truthfulness cannot be surpassed:—"It is a remarkable circumstance that the most brilliant colours of plants are to be seen on the highest mountains, in spots that are most exposed to the wildest weather. The brightest lichens and mosses, the loveliest gems of wild flowers, abound far up on the bleak storm-scalped peak."

Family *Corystidæ*.—*Atelecyclus heterodon* (circular crab) I obtained some years since on the shore of Ferriter's Cove, co. Kerry, after a gale. It is with several others included in the list of donations to the Natural History Society, as stated in the Proceedings 13th March, 1857. It is a deep water species, though given in Dr. Kinahan's list of Dublin Crustacea, as found by him in the young state under stones at Merrion.

Corystes cassivelaunus (the masked crab) has been often found on sandy beaches after gales. It is a remarkable species. The carapace is oval, with lateral spines, the antennæ and forelegs of the male longer than the body. I have taken the male in the trawl net, Dingle Bay. The female in point of size materially differs.

Thia polita has only so far been met with on sandy beaches in Galway Bay. The figure in the appendix to Bell, p. 365, is more characteristic of the Mediterranean specimens than those of Gal-

way Bay, which are smaller. This rare species was first found by the late William M'Calla in 1845.

Having so far remarked on the sub-order, *Brachyura*, it must be seen how variable are the characters of its species, and how little dependence can be placed upon distinctions based on denticulations, spinous or hirsute developments. The variableness of such characters is even more apparent in the next sub-order, *Anomoura*, and bears out the sound observations of Professor Bell in his valuable work on British Stalk-eyed Crustacea, in the introduction to which he says, "It will be found that in scarcely any other class of animals is there greater variety of form and structure, or more striking apparent anomalies in the modifications of the typical plan of organization, or in some cases greater difficulties in ascertaining the true homologies of the different elements, than in the present, in fact, there is scarcely any group of animals in which the homologies are more recondite, the variations and the habits and requirements of the animals more beautiful and instructive."

